

ABSTRACT OF THE INVENTION

The present invention provides methods and compositions for providing graft recipients with epidermal melanocytes. Specifically, the methods and compositions of the invention provide for populations of epidermal melanocytes that may be isolated from a patient and cultured *in vitro* to generate a proliferating population of epidermal melanocytes that exhibit growth, migration and melanin production. The invention is based on the discovery of a culture medium composed of natural components, for culturing epidermal melanocytes that exhibit increased proliferative capacity, migratory behaviors and melanin production. The invention provides novel *in vitro* methods for culturing epidermal melanocytes, including those isolated from the skin of a healthy subject, to generate a proliferating population of epidermal melanocytes. The methods and compositions of the invention may be used for transplantation to treat patients having hypopigmentation or depigmentation skin disorders.